SEQUENCE LISTING

<110> ICARD-LIEPKALNS, Christine
MALLET, Jacques
RAVASSARD, Philippe

<120> POLYPEPTIDES OF THE "BASIC-HELIX-LOOP-HELIX" bHLH FAMILY, CORRESPONDING NUCLEIC ACID SEQUENCES

<130> P26,952 USA

<140> US 09/595,947
<141> 2000-06-16

<150> FR96/15651
<151> 1996-12-19

<150> PCT/FR97/02368
<151> 1997-12-19

<150> US 09/331,356
<151> 1999-07-12

<160> 40

<170> PatentIn Ver. 3.1

<210> 1
<211> 1460
<212> DNA

<213> Rattus norvegicus

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cgattagcag ctcagaagtc cctctgggtc tcaccactgc acagaggccg aggacccccc 180

ccgagcttct ttgctgcctc cagacgcaat ttactccagg cgagggcgcc tgcagctcag 240

caaaacttcg aagcgagcag aggggttcag ctatccaccg ctgcttgact ctgaccaccc 300

gcagctctct gttcttttga gcccggagta actaggtaac atttaggaac ctccaaaggg 360

tagaagaggg gagtgggtgg gcgtactcta gtcccgcgtg gagtgacctc taagtcagag 420

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cgcccaccat ccaagtgtcc caagagaccc agcaaccctt tcccggagcc tcggaccacg 540

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gcaacaggcc caagagcgag ttggcactga gcaagcagcg acgaagccgg cgcaagaagg 720

ccaacgaccg ggagcgcaac cgcatgcaca accttaactc cgcgctggat gcgctgcgcg 780

gtgtcctgcc caccttcccg gatgacgcca aacttacaaa gatcgagacc ctgcgcttcg 840

cccacaacta catttgggca ctgactcaga cgctgcgcat agcggaccac agcttctacg 900

gccccgagcc ccctgtgccc tgtggggagc tgggaagccc gggaggggcc tccagcggcg 960

actggggctc tatctactcc ccagtttccc aagctggtag cctgagcccc acagcctcat 1020

tggaggagtt ccctggcctg caggtgccca gctccccatc ctgtctgctc ccgggcaccc 1080

tggtgttctc agacttcttg tgaagggccc aaacaggccc tgggcggtgg gcgctggcag 1140

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atacttcctg gtgactccgc cctctttcaa atctgcgggc ctccaaccac cgctttctcc 1440

agagtgacct aatccagtgt 1460

<210> 2
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<220>
<223> n = Inosine

<400> 2
aatkhgmgng agcgcndkcg cryg 24

<210> 3
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primers

<400> 3
ggcsrdtytc agggtsybga yctt 24

<210> 4
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primers

<400> 4
aaccttaact ccgcgctgga tgcgc 25

<210> 5
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primers

<400> 5 cgcggtgtcc tgcccacc 18

<210> 6
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: E box

<400> 6
caggtg 6

<210> 7
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutated E box

<400> 7
tccgtg 6

<210> 8
<211> 214
<212> PRT
<213> Rattus norvegicus

<400> 8

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Met Ala Pro His Pro Leu Asp Ala Pro Thr Ile Gln Val Ser Gln Glu
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Thr Gln Gln Pro Phe Pro Gly Ala Ser Asp His Glu Val Leu Ser Ser
            20                  25                  30

Asn Ser Thr Pro Pro Ser Pro Thr Leu Val Pro Arg Asp Cys Ser Glu
        35                  40                  45

Ala Glu Ala Gly Asp Cys Arg Gly Thr Ser Arg Lys Leu Arg Ala Arg
    50                  55                  60

Arg Gly Gly Arg Asn Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65                  70                  75                  80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
                85                  90                  95

His Asn Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
            100                 105                 110

Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
        115                 120                 125

His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
    130                 135                 140

Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro Cys Gly Glu Leu Gly Ser
145                 150                 155                 160

Pro Gly Gly Gly Ser Ser Gly Asp Trp Gly Ser Ile Tyr Ser Pro Val
                165                 170                 175

Ser Gln Ala Gly Ser Leu Ser Pro Thr Ala Ser Leu Glu Glu Phe Pro
            180                 185                 190
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Gly Leu Gln Val Pro Ser Ser Pro Ser Cys Leu Leu Pro Gly Thr Leu
195 200 205

Val Phe Ser Asp Phe Leu
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<210> 9
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<212> DNA
<213> Homo sapiens

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tgctcatcgc tctctattct tttgcgccgg tagaaaggta atatttggag gccttcgagg 180

gacgggcagg ggaaagaggg atcctctgac ccagcggggg ctgggaggat ggctgttttt 240

gtttttccc acctagcctc ggaatcgcgg actgcgccgt gacggactca aacttaccct 300

tccctctgac cccgccgtag gatgacgcct caaccctcgg gtgcgcccac tgtccaagtg 360

acccgtgaga cggagcggtc cttccccaga gcctcggaag acgaagtgac ctgccccacg 420

tccgccccgc ccagccccac tcgcacaccg gggaactgcg cagaggcgga agagggaggc 480

tgccgagggg ccccgaggaa gctccgggca cggcgcgggg gacgcagccg gcctaagagc 540

gagttggcac tgagcaagca gcgacggagt cggcgaaaga aggccaacga ccgcgagcgc 600

aatcgaatgc acgacctcaa ctcggcactg gacgccctgc gcggtgtcct gcccaccttc 660

ccagacgacg cgaagctcac caagatcgag acgctgcgct tcgcccacaa ctacatctgg 720

gcgctgactc aaacgctgcg catagcggac cacagcttgt acgcgctgga gccgccggcg 780

ccgcactgcg gggagctggg cagcccaggc ggtccccccg gggactgggg gtccctctac 840

tccccagtct cccaggctgg cagcctgagt cccgccgcgt cgctggagga gcgacccggg 900

ctgctggggg ccacctcttc cgcctgcttg agcccaggca gtctggcttt ctcagatttt 960

ctgtgaaagg acctgtctgt cgctgggctg tgggtgctaa gggtaaggga gagggaggga 1020

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gcattgcaaa gtgcgctcat tttaggcctc ctctctgcca ccaccccata atcccattca 1260

aagaatacta gaatggtagc actacccggc cggagccgcc caccgtcttg ggtcgcccta 1320

ccctcactca 1330

<210> 10
<211> 214
<212> PRT
<213> Homo sapiens

<400> 10
Met Thr Pro Gln Pro Ser Gly Ala Pro Thr Val Gln Val Thr Arg Glu

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  1               5                  10                  15

Thr Glu Arg Ser Phe Pro Arg Ala Ser Glu Asp Glu Val Thr Cys Pro
            20                  25                  30

Thr Ser Ala Pro Pro Ser Pro Thr Arg Thr Pro Gly Asn Cys Ala Glu
        35                  40                  45

Ala Glu Glu Gly Gly Cys Arg Gly Ala Pro Arg Lys Leu Arg Ala Arg
    50                  55                  60

Arg Gly Gly Arg Ser Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65                  70                  75                  80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
                85                  90                  95

His Asp Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
            100                 105                 110

Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
        115                 120                 125

His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
    130                 135                 140

Ser Leu Tyr Ala Leu Glu Pro Pro Ala Pro His Cys Gly Glu Leu Gly
145                 150                 155                 160

Ser Pro Gly Gly Pro Pro Gly Asp Trp Gly Ser Leu Tyr Ser Pro Val
                165                 170                 175
Ser Gln Ala Gly Ser Leu Ser Pro Ala Ala Ser Leu Glu Glu Arg Pro
            180                 185                 190

Gly Leu Leu Gly Ala Thr Ser Ser Ala Cys Leu Ser Pro Gly Ser Leu
        195                 200                 205

Ala Phe Ser Asp Phe Leu
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<210> 11
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 11
caacgaccgg cagcgcaa 18

<210> 12
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 12
gcccagatgt agttgtgggc gaag 24

<210> 13
<211> 60
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 13
atcgttgaga ctcgtaccag cagagtcacg agagagacta cacggtactg gnnnnnnnnn 60

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 14
agacgacgcg aagctcacca 20

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 15
gctcaccaag atcgagacgc tgcg 24

<210> 16
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 16
atcgttgaga ctcgtaccag cagag 25

<210> 17
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 17
tcgtaccagc agagtcacga gagag 25

<210> 18
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 18
ctgccagcct gggagactg 19

<210> 19
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 19
ctgcatctat ctaatgctcc tctcgctacc tgctcactct gcgtgacatc 50

<210> 20
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 20
gatgtcacgc agagtgagca ggtag 25

<210> 21
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 21
agcctgggag actggggagt aga 23

<210> 22
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 22
agagtgagca ggtagcgaga ggag 24

<210> 23
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 23
cgctatgcgc agcgtttgag tc 22

<210> 24
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 24
cctcggaccc cattctctct tcttt 25

<210> 25
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 25
tgagtgaggg tagggcgacc caag 24

<210> 26
<211> 15
<212> DNA
<213> Artificial Sequence

<220> <223> Description of Artificial Sequence: Probe

<400> 26
aggaagctcc gggca 15

<210> 27
<211> 1381
<212 > RNA
<213> Artificial Sequence

<220> <223> Description of Artificial Sequence: Probe

<400> 27
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gguagggcga cccaagacgg ugggcggcuc cggccgggua gugcuaccau ucuaguauuc 120

uuugaauggg auuauggggu gguggcagag aggaggccua aaaugagcgc acuuugcaau 180

gcccacuucg cgcgggcagc agcaaggguu gcgugcguug gcgcggcucg gagggccggg 240

gaaugaaccc agccuaccgc ccccguggag gccugggccg gccagggguc agcuagggag 300

aagcagaagg ascaagugcu uuugagggcc gccsccgucg gccacccucu acggcucccg 360

gcucccuccc ucucccuuac ccuuagcacc cacagcccag cgacagacag guccuuucac 420

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agcccggguc gcuccuccag cgacgcggcg ggacucaggc ugccagccug ggagacuggg 540

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cccucgaagg ccuccaaaua uuaccuuucu accggcgcaa aagaauagag agcgaugagc 1260

agcgagggcc guggggagcu cagcgggcuu cuggucgcca aguucagcug agcugcaggc 1320

gcccccgccu gggaguugcc ccagccbcaa aggagaaaag aagagagaau gggguccgag 1380

g 1381

<210> 28
<211> 1427
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probe

<400> 28
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uucacuagug auuccucgga ccccauucuc ucuucuuuuc uccuuugggg cuggggcaac 120

ucccaggcgg gggcgccugc agcucagcug aacuuggcga ccagaagccc gcugagcucc 180

ccacggcccu cgcugcucau cgcucucuau ucuuuugcgc cgguagaaag guaauauuug 240

gaggccuucg agggacgggc aggggaaaga gggauccucu gacccagcgg gggcugggag 300

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ucaaacuuac ccuucccucu gaccccgccg uaggaugacg ccucaacccu cgggugcgcc 420

cacuguccaa gugacccgug agacggagcg guccuucccc agagccucgg aagacgaagu 480

gaccugcccc acguccgccc cgcccagccc cacucgcaca ccggggaacu gcgcagaggc 540

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ccggccuaag agcgaguugg cacugagcaa gcagcgacgg agucggcgaa agaaggccaa 660

cgaccgcgag cgcaaucgaa ugcacgaccu caacucggca cuggacgccc ugcgcggugu 720

ccugcccacc uucccagacg acgcgaagcu caccaagauc gagacgcugc gcuucgccca 780

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auaaucccau ucaaagaaua cuagaauggu agcacuaccc ggccggagcc gcccaccguc 1380

uugggucgcc cuacccucac ucaaaucgaa uucccgcggc cgccaug 1427

<210> 29
<211> 715
<212> DNA
<213> Rattus norvegicus

<400> 29
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ttcgccctca actacatttg ggcactgact cagacgctgc gcatagcgga ccacagcttc 120

tacggccccg agccccctgt gccctgtggg gagctgggaa gcccgggagg gggctccagc 180

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tcattggagg agttccctgg cctgcacgtg cccagctccc catcctatct gctcccgggc 300

accctggtgt tctcagactt cttgtgaagg gcccaaacag gccctgggcg gtgggcgctg 360

gcagaaaggg agggagtcag agctgtctga aatggaaggt agtggaggca ctcgagcatc 420

tcgcccttc tggctttcat tagtcaggtc cctgatttaa ccaggattcg cacagttcct 480

tgctgctgtg cgtgcacaaa ggacattgca ggctgatctc ctcttaaccc tcctcagtgt 540

ggccacctca aactcccgct ccaagcagag gagagccgta gcactaaata gttgggagac 600

tcccatactt cctggtgact ccgccctctt tcaaatctgc gggcctccaa ccaccgcttt 660

ctccagagtg acctaatcca gtgttgcgtc ttacctcact ggctcttgtt ccata 715

<210> 30
<211> 108
<212> PRT
<213> Rattus norvegicus

<400> 30

Arg Gly Val Leu Pro Thr Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile
1 5 10 15

Glu Thr Leu Arg Phe Ala Leu Asn Tyr Ile Trp Ala Leu Thr Gln Thr
20 25 30

Leu Arg Ile Ala Asp His Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro
35 40 45

Cys Gly Glu Leu Gly Ser Pro Gly Gly Gly Ser Ser Gly Asp Trp Gly
50 55 60

Ser Ile Tyr Ser Pro Val Ser Gln Ala Gly Ser Leu Ser Pro Thr Ala
65 70 75 80

Ser Leu Glu Glu Phe Pro Gly Leu Gln Val Pro Ser Ser Pro Ser Cys
85 90 95

Leu Leu Pro Gly Thr Leu Val Phe Ser Asp Phe Leu
100 105

<210> 31
<211> 60
<212> PRT
<213> Rattus norvegicus

<400> 31

Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met His Asn
1 5 10 15

Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr Phe Pro
20 25 30

Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala His Asn
35 40 45

Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala
50 55 60

<210> 32
<211> 60
<212> PRT
<213> Mus musculus

<400> 32

Gln Arg Arg Leu Ala Ala Asn Ala Arg Glu Arg Arg Arg Met His Gly
1 5 10 15

Leu Asn His Ala Phe Asp Gln Leu Arg Asn Val Ile Pro Ser Phe Asn
20 25 30

Asn Asp Lys Lys Leu Ser Lys Tyr Glu Thr Leu Gln Met Ala Gln Ile
35 40 45

Tyr Ile Asn Ala Leu Ser Glu Leu Leu Gln Thr Pro
50 55 60

<210> 33
<211> 60
<212> PRT
<213> Mus musculus

<400> 33

Leu Arg Arg Met Lys Ala Asn Ala Arg Glu Arg Asn Arg Met His Gly
1 5 10 15

Leu Asn Ala Ala Leu Asp Asn Leu Arg Lys Val Val Pro Cys Tyr Ser
20 25 30

Lys Thr Gln Lys Leu Ser Lys Ile Glu Thr Leu Arg Leu Ala Lys Asn
35 40 45

Tyr Ile Trp Ala Leu Ser Glu Ile Leu Arg Ser Gly
50 55 60

<210> 34
<211> 60
<212> PRT
<213> Mus musculus

<400> 34

Ala Ala Val Ala Arg Arg Asn Glu Arg Glu Arg Asn Arg Val Lys Leu
1 5 10 15

Val Asn Leu Gly Phe Ala Thr Leu Arg Glu His Val Pro Asn Gly Ala
20 25 30

Ala Asn Lys Lys Met Ser Lys Val Glu Thr Leu Arg Ser Ala Val Gln
35 40 45

Tyr Ile Arg Ala Leu Gln Gln Leu Leu Asp Glu His
50 55 60

<210> 35
<211> 237
<212> PRT
<213> Homo sapiens

<400> 35

Met Pro Ala Arg Leu Glu Thr Cys Ile Ser Asp Leu Asp Cys Ala Ser
1 5 10 15

Ser Ser Gly Ser Asp Leu Ser Gly Phe Leu Thr Asp Glu Glu Asp Cys
20 25 30

Ala Arg Leu Gln Gln Ala Ala Ser Ala Ser Gly Pro Pro Ala Pro Ala
35 40 45

Arg Arg Ser Ala Pro Asn Ile Ser Arg Ala Ser Glu Val Pro Gly Ala
50 55 60

Gln Asp Asp Glu Gln Glu Arg Arg Arg Arg Arg Gly Arg Thr Arg Val
65 70 75 80

Arg Ser Glu Ala Leu Leu His Ser Leu Arg Arg Ser Arg Arg Val Lys
85 90 95

Ala Asn Asp Arg Glu Arg Asn Arg Met His Asn Leu Asn Ala Ala Leu
100 105 110

Asp Ala Leu Arg Ser Val Leu Pro Ser Phe Pro Asp Asp Thr Lys Leu
115 120 125

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Thr Lys Ile Glu Thr Leu Arg Phe Ala Tyr Asn Tyr Ile Trp Ala Leu
    130                 135                 140

Ala Glu Thr Leu Arg Leu Ala Asp Gln Gly Leu Pro Gly Gly Gly Ala
145                 150                 155                 160

Arg Glu Arg Leu Leu Pro Pro Gln Cys Val Pro Cys Leu Pro Gly Pro
                165                 170                 175

Pro Ser Pro Ala Ser Asp Ala Glu Ser Trp Gly Ser Gly Ala Ala Ala
            180                 185                 190

Ala Ser Pro Leu Ser Asp Pro Ser Ser Pro Ala Ala Ser Glu Asp Phe
        195                 200                 205

Thr Tyr Arg Pro Gly Asp Pro Val Phe Ser Phe Pro Ser Leu Pro Lys
    210                 215                 220

Asp Leu Leu His Thr Thr Pro Cys Phe Ile Pro Tyr His
225                 230                 235
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<210> 36
<211> 244
<212> PRT
<213> Mus musculus

<400> 36

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Met Pro Ala Pro Leu Glu Thr Cys Ile Ser Asp Leu Asp Cys Ser Ser
1               5                   10                  15

Ser Asn Ser Ser Ser Asp Leu Ser Ser Phe Leu Thr Asp Glu Glu Asp
            20                  25                  30

Cys Ala Arg Leu Gln Pro Leu Ala Ser Thr Ser Gly Leu Ser Val Pro
        35                  40                  45

Ala Arg Arg Ser Ala Pro Ala Leu Ser Gly Ala Ser Asn Val Pro Gly
    50                  55                  60

Ala Gln Asp Glu Glu Gln Glu Arg Arg Arg Arg Arg Gly Arg Ala Arg
65                  70                  75                  80

Val Arg Ser Glu Ala Leu Leu His Ser Leu Arg Arg Ser Arg Arg Val
                85                  90                  95

Lys Ala Asn Asp Arg Glu Arg Asn Arg Met His Asn Leu Asn Ala Ala
            100                 105                 110

Leu Asp Ala Leu Arg Ser Val Leu Pro Ser Phe Pro Asp Asp Thr Lys
        115                 120                 125

Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala Tyr Asn Tyr Ile Trp Ala
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130 135 140

Leu Ala Glu Thr Leu Arg Leu Ala Asp Gln Gly Leu Pro Gly Gly Ser
145 150 155 160

Ala Arg Glu Arg Leu Leu Pro Pro Gln Cys Val Pro Cys Leu Pro Gly
165 170 175

Pro Pro Ser Pro Ala Ser Asp Thr Glu Ser Trp Gly Ser Gly Ala Ala
180 185 190

Ala Ser Pro Cys Ala Thr Val Ala Ser Pro Leu Ser Asp Pro Ser Ser
195 200 205

Pro Ser Ala Ser Glu Asp Phe Thr Tyr Gly Pro Gly Asp Pro Leu Phe
210 215 220

Ser Phe Pro Gly Leu Pro Lys Asp Leu Leu His Thr Thr Pro Cys Phe
225 230 235 240

Ile Pro Tyr His

<210> 37
<211> 214
<212> PRT
<213> Mus musculus

<400> 37

Met Ala Pro His Pro Leu Asp Ala Leu Thr Ile Gln Val Ser Pro Glu
1 5 10 15

Thr Gln Gln Pro Phe Pro Gly Ala Ser Asp His Glu Val Leu Ser Ser
20 25 30

Asn Ser Thr Pro Pro Ser Pro Thr Leu Ile Pro Arg Asp Cys Ser Glu
35 40 45

Ala Glu Val Gly Asp Cys Arg Gly Thr Ser Arg Lys Leu Arg Ala Arg
50 55 60

Arg Gly Gly Arg Asn Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65 70 75 80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
85 90 95

His Asn Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
100 105 110

Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
115 120 125

```
His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
    130                 135                 140

Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro Cys Gly Glu Leu Gly Ser
145                 150                 155                 160

Pro Gly Gly Gly Ser Asn Gly Asp Trp Gly Ser Ile Tyr Ser Pro Val
                165                 170                 175

Ser Gln Ala Gly Asn Leu Ser Pro Thr Ala Ser Leu Glu Glu Phe Pro
            180                 185                 190

Gly Leu Gln Val Pro Ser Ser Pro Ser Tyr Leu Leu Pro Gly Ala Leu
        195                 200                 205

Val Phe Ser Asp Phe Leu
    210
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<210> 38
<211> 214
<212> PRT
<213> Rattus norvegicus

<400> 38

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Met Ala Pro His Pro Leu Asp Ala Pro Thr Ile Gln Val Ser Gln Glu
1               5                   10                  15

Thr Gln Gln Pro Phe Pro Gly Ala Ser Asp His Glu Val Leu Ser Ser
            20                  25                  30

Asn Ser Thr Pro Pro Ser Pro Thr Leu Val Pro Arg Asp Cys Ser Glu
        35                  40                  45

Ala Glu Ala Gly Asp Cys Arg Gly Thr Ser Arg Lys Leu Arg Ala Arg
    50                  55                  60

Arg Gly Gly Arg Asn Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65                  70                  75                  80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
                85                  90                  95

His Asn Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
            100                 105                 110

Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
        115                 120                 125

His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
    130                 135                 140
```

```
Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro Cys Gly Glu Leu Gly Ser
145                 150                 155                 160

Pro Gly Gly Gly Ser Ser Gly Asp Trp Gly Ser Ile Tyr Ser Pro Val
                165                 170                 175

Ser Gln Ala Gly Ser Leu Ser Pro Thr Ala Ser Leu Glu Glu Phe Pro
            180                 185                 190

Gly Leu Gln Val Pro Ser Ser Pro Ser Cys Leu Leu Pro Gly Thr Leu
        195                 200                 205

Val Phe Ser Asp Phe Leu
    210
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<210> 39
<211> 214
<212> PRT
<213> Homo sapiens

<400> 39

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Met Thr Pro Gln Pro Ser Gly Ala Pro Thr Val Gln Val Thr Arg Glu
1               5                   10                  15

Thr Glu Arg Ser Phe Pro Arg Ala Ser Glu Asp Glu Val Thr Cys Pro
            20                  25                  30

Thr Ser Ala Pro Pro Ser Pro Thr Arg Thr Pro Gly Asn Cys Ala Glu
        35                  40                  45

Ala Glu Glu Gly Gly Cys Arg Gly Ala Pro Arg Lys Leu Arg Ala Arg
    50                  55                  60

Arg Gly Gly Arg Ser Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65                  70                  75                  80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
                85                  90                  95

His Asp Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
            100                 105                 110

Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
        115                 120                 125

His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
    130                 135                 140

Ser Leu Tyr Ala Leu Glu Pro Pro Ala Pro His Cys Gly Glu Leu Gly
145                 150                 155                 160
```

Ser Pro Gly Gly Pro Pro Gly Asp Trp Gly Ser Leu Tyr Ser Pro Val
165 170 175

Ser Gln Ala Gly Ser Leu Ser Pro Ala Ala Ser Leu Glu Glu Arg Pro
180 185 190

Gly Leu Leu Gly Ala Thr Ser Ser Ala Cys Leu Ser Pro Gly Ser Leu
195 200 205

Ala Phe Ser Asp Phe Leu
210

<210> 40
<211> 263
<212> PRT
<213> Mus musculus

<400> 40

Met Phe Val Lys Ser Glu Thr Leu Glu Leu Lys Glu Glu Glu Glu Val
1 5 10 15

Leu Met Leu Leu Gly Ser Ala Ser Pro Ala Ser Ala Thr Leu Thr Pro
20 25 30

Met Ser Ser Ser Ala Asp Glu Glu Glu Asp Glu Glu Leu Arg Arg Pro
35 40 45

Gly Ser Ala Arg Gly Gln Arg Gly Ala Glu Ala Glu Gln Gly Val Gln
50 55 60

Gly Ser Pro Ala Ser Gly Ala Gly Gly Cys Arg Pro Gly Arg Leu Leu
65 70 75 80

Gly Leu Met His Glu Cys Lys Arg Arg Pro Ser Arg Ser Arg Ala Val
85 90 95

Ser Arg Gly Ala Lys Thr Ala Glu Thr Val Gln Arg Ile Lys Lys Thr
100 105 110

Arg Arg Leu Lys Ala Asn Asn Arg Glu Arg Asn Arg Met His Asn Leu
115 120 125

Asn Ala Ala Leu Asp Ala Leu Arg Glu Val Leu Pro Thr Phe Pro Glu
130 135 140

Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala His Asn Tyr
145 150 155 160

Ile Trp Ala Leu Thr Glu Thr Leu Arg Leu Ala Asp His Cys Ala Gly
165 170 175

Ala Gly Gly Leu Gln Gly Ala Leu Phe Thr Glu Ala Val Leu Leu Ser

```
            180                 185                 190

Pro Gly Ala Ala Leu Gly Ala Ser Gly Asp Ser Pro Ser Pro Pro Ser
        195                 200                 205

Ser Trp Ser Cys Thr Asn Ser Pro Ala Ser Ser Ser Asn Ser Thr Ser
    210                 215                 220

Pro Tyr Ser Cys Thr Leu Ser Pro Ala Ser Pro Gly Ser Asp Val Asp
225                 230                 235                 240

Tyr Trp Gln Pro Pro Pro Pro Glu Lys His Arg Tyr Ala Pro His Leu
                245                 250                 255

Pro Leu Ala Arg Asp Cys Ile
            260
```